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avives@eresmas.net

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Li, Wen Chin; Liu, D.

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***Scoparia monticola* Nuss, 1998 a new record for Chinese fauna (Lepidoptera: Crambidae, Scopariinae)**

W. C. Li & D. Liu

Abstract

Scoparia monticola Nuss, 1998 known originally from Mindanao Island and Sumatra is recorded from China for the first time. This species can be distinguished easily from its congeners by the sacculus of the male genitalia, which is ventrally enlarged, forming a bulge from which arise long setae, and in the female, by the corpus bursae with two signa. The adults and the genitalia are illustrated, along with a map showing the known localities. All materials are deposited in the Insect Museum, Jiangxi Agricultural University, Nanchang, China.

KEY WORDS: Lepidoptera, Crambidae, Scopariinae, *Scoparia*, new record, China.

***Scoparia monticola* Nuss, 1998 un nuevo registro para la fauna China
(Lepidoptera: Crambidae, Scopariinae)**

Resumen

Se registra por primera vez de China a *Scoparia monticola* Nuss, 1998 conocida originalmente de Mindanao y Sumatra. Esta especie puede ser fácilmente distinguida de sus congéneres por el sacculus de la genitalia del macho, el cual está ventralmente ensanchado, formando una protuberancia con largas setas erizadas y la hembra con el corpus bursae con dos signa. Se presentan los adultos y la genitalia, así como con un mapa mostrando las localidades conocidas. Todo el material está depositado en el Insect Museum, Jiangxi Agricultural University, Nanchang, China.

PALABRAS CLAVE: Lepidoptera, Crambidae, Scopariinae, *Scoparia*, nuevo registro, China.

Introduction

Scoparia Haworth, 1811 is the second largest genus of the subfamily Scopariinae: 233 species are recorded worldwide (NUSS *et al.*, 2003-2013). The forewing pattern of the genus is usually composed of black, grey and brown scales, sometimes with some mixture of ochreous scales; an antemedian line with two antemedian stigmata at the outer side; the distal end of the discoidal cell with an X- or 8-shaped stigma; a postmedian line which extends from costa to dorsum, and usually has a dent towards the discoidal stigma; and a subterminal line, which together with the postmedian line, often forms an X-shape. The genus can be recognized by the male genitalia with a long and thin gnathos, a well-developed sacculus with a free distal process and the presence of cornuti in the aedeagus (LI, 2012). Up to date, the genus is represented on all continents except Antarctica and many oceanic islands but does not occur in tropical lowland forests (NUSS, 1998; LI *et al.*, 2010). Prior to this study, 23 species have been verified in China (LI *et al.*, 2010; LI, 2012). The present paper reports another newly recorded species from China. Terminology for morphological structures follows NUSS (2005). Genitalia were

prepared and mounted using the methods introduced by LI (2002). The images of the adults were taken with a digital camera Canon G12. The illustrations of the genitalia were prepared with a digital camera DV320 OPTPro2010_Chs attached to a digital microscope Optec BK-DM320. The map was made using DIVAGIS 5.2 (HIJMANS *et al.* 2005a) based on the topographic data (HIJMANS *et al.* 2004, 2005b). All the studied specimens are deposited in the Insect Museum, Jiangxi Agricultural University, Nanchang, China (JXAUM).

Scoparia monticola Nuss, 1998 (Figs. 2-4)

Scoparia monticola Nuss, 1998. *Nachr. entomol. Ver. Apollo, N. F.*, suppl., 17: 486

Material examined: 2 ♂♂, 2 ♀♀, CHINA, Jiangxi Province: Shangrao City, Guangfeng County, Tongboshan [118° 12' E, 28° 03' N], Lipingxi primary forest, 900 m, 30-VIII-2-IX-2012, leg. Weichun Li and Li Huang, prep. gen. LW12055, LW12056, LW12060.

Description Adult (Fig. 2): Forewing length 6.0-6.5 mm. Frons white mixed with pale brown. Vertex white mixed with grey. Labial palpus blackish brown, ventral base white, tip grey mixed with white. Maxillary palpus blackish brown except white tip; antenna of male with white scapus, dorsally mixed with pale brown, flagellomeres with dorsal surface pale brown and white alternately, ventral surface pale brown and covered with dense white hairs; antenna of female with pale brown scapus, flagellomeres with dorsal surface pale brown and blackish brown alternately, ventral surface as in male. Patagium blackish brown. Thorax and tegula pale brown mixed with white. Forewing with greyish white transverse lines and blackish brown stigmata in male, with white transverse lines and black stigmata in female: antemedian line outcurved at middle; antemedian stigmata ovate, separated with antemedian line; distal discoidal stigma 8-shaped, connected with spot at costa; postmedian line meeting costal and dorsal margin perpendicularly, outcurved near middle, postmedian line in male inconspicuously dentate towards distal discoidal stigma, slightly incurved at about dorsal two fifths, that of female conspicuously dentate towards distal discoidal stigma, distinctly incurved at about dorsal one third; subterminal line incurved conspicuously, absent near middle; fringe white with pale brown spotted line near base. Hindwing of male greyish white, fringe white with grey line near base; that of female pale brown, fringe also greyish white but with a darker line near base. Legs white; foreleg covered with dense blackish brown scales on outer side; mid- and hindlegs covered with sparse blackish brown scales on outer side; tarsi blackish brown and white alternately on outer side. Abdomen blackish brown mixed with grey.

Male genitalia (Fig. 3): Uncus covered with dense setae, broad at base, tapered to blunt apex. Gnathos slender, slightly shorter than uncus, pointed apically. Valva broad, armed with transverse pleats between half and distal one fifth, apex rounded; costa thin and long, gently convex, with a small process near base. Sacculus dorsally convex at about half and concave at about distal one fourth, ventrally conspicuously convex and covered with long setae; free distal process at about two thirds of valva. Juxta narrow basally, broadened towards tip, posterior margin distinctly incised as V-shape. Aedeagus straight, slightly longer than valva; opening of ductus ejaculatorius at about basal two fifths; cornutus thornlike, basal half swollen and armed with sclerotized pleats, distal half thin and long, tapered to pointed tip.

Female genitalia (Fig. 4): Papilla anale ovate, densely covered with setae. Apophysis posterior about three fourths length of apophysis anterior, one lateral margin of apophysis anterior angled at basal one fourth. Tergite 8 about half as long as apophysis posterior, scattered with setae. Antrum well-developed, base slightly narrower than tergite 8, gradually becoming thinner towards distal part. Colliculum invisible. Ductus seminalis arising anterior to antrum. Ductus bursae narrow and long, membranous. Corpus bursae ovate, nearly as long as ductus bursae, medially with longitudinally sclerotized pleats; left side of sclerotized pleats covered with tiny spines, right side with dense granules; signa double, composed of thorns and placed in granular area: ovate signum situated on posterior part of corpus bursae, striplike signum on anterior part of corpus bursae; appendix bursae ovate, from anterior margin of corpus bursae.

Distribution (Fig. 1): China (Jiangxi); Philippines (Mindanao), Indonesia (Sumatra).

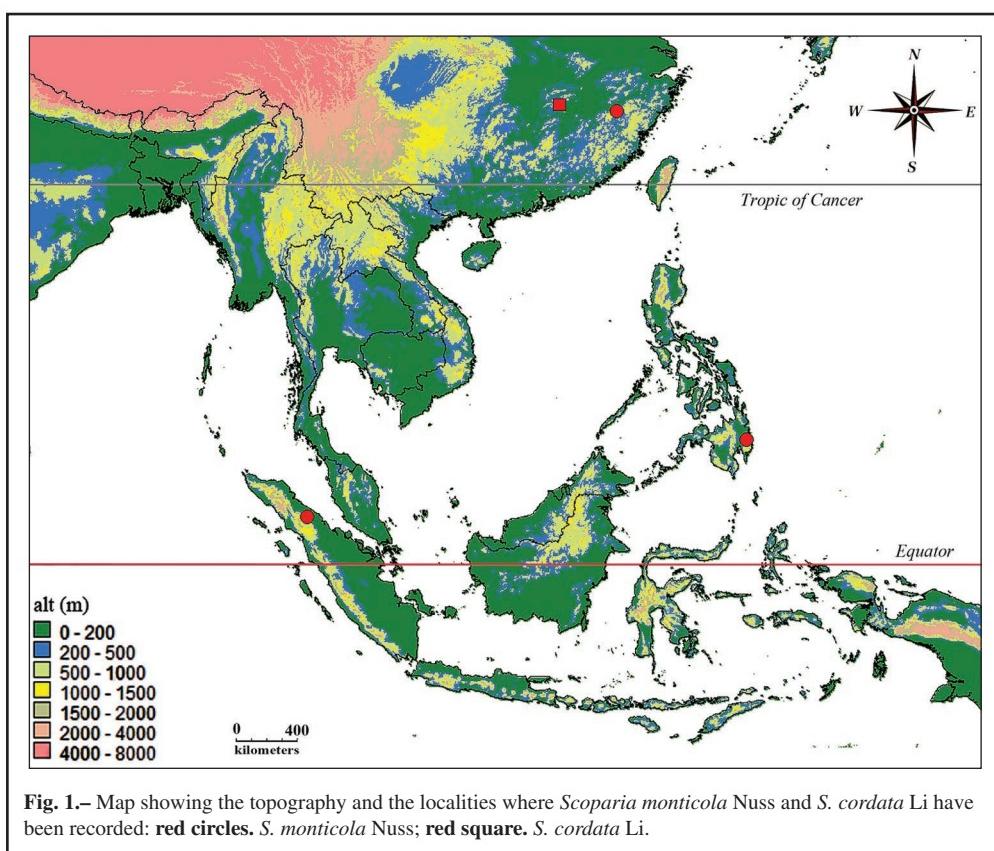


Fig. 1.—Map showing the topography and the localities where *Scoparia monticola* Nuss and *S. cordata* Li have been recorded: red circles, *S. monticola* Nuss; red square, *S. cordata* Li.

Remarks: *Scoparia monticola* can be distinguished easily from its congeners by the sacculus, which is ventrally enlarged to a bulge from which arise long setae, and by the presence two signa in the corpus bursae. This species is recorded from China for the first time.

Discussion: The corpus bursae in the female genitalia of *S. monticola* has two signa, which is in contrast to the definition of the genus *Scoparia* (NUSS, 1998). Also, the invisible colliculum is in contrast to the general characters of the genus given by LI *et al.* (2010). Even so, the male genitalia of this species show all typical characters of the genus *Scoparia* (long, narrow gnathos, well-developed sacculus with a free distal process and the presence of cornutus in the aedeagus), defined by NUSS (1998). Also, in some species described from China, the females have a signum (LI *et al.*, 2010). On balance, the presence or absence of a signum is an inexact character for the genus, and characters in the female should not be overemphasized in the definition of the genus.

At present, only *Scoparia cordata* Li, 2012 collected from Tonggu of Jiangxi Province [28° 32' N, 114° 22' E] is known resemble *S. monticola* in the male genitalia, in which the sacculus is ventrally enlarged to a bulge from which arise long setae (LI, 2012: fig. 3). The two species have been found at altitudes between 500-1500 m in montane localities shown on the map, which indicates the topography and the localities where *S. monticola* and *S. cordata* have been recorded (Fig. 1). At present, *S. monticola* is known from the subtropical and tropical regions; *S. cordata* is recorded also from the subtropical region, but with many distribution gaps in similar localities with similar climate in both the Chinese subtropical region and in Southeast Asia. The full distribution of the two species and other similar species still unknown in the above regions requires further investigation.

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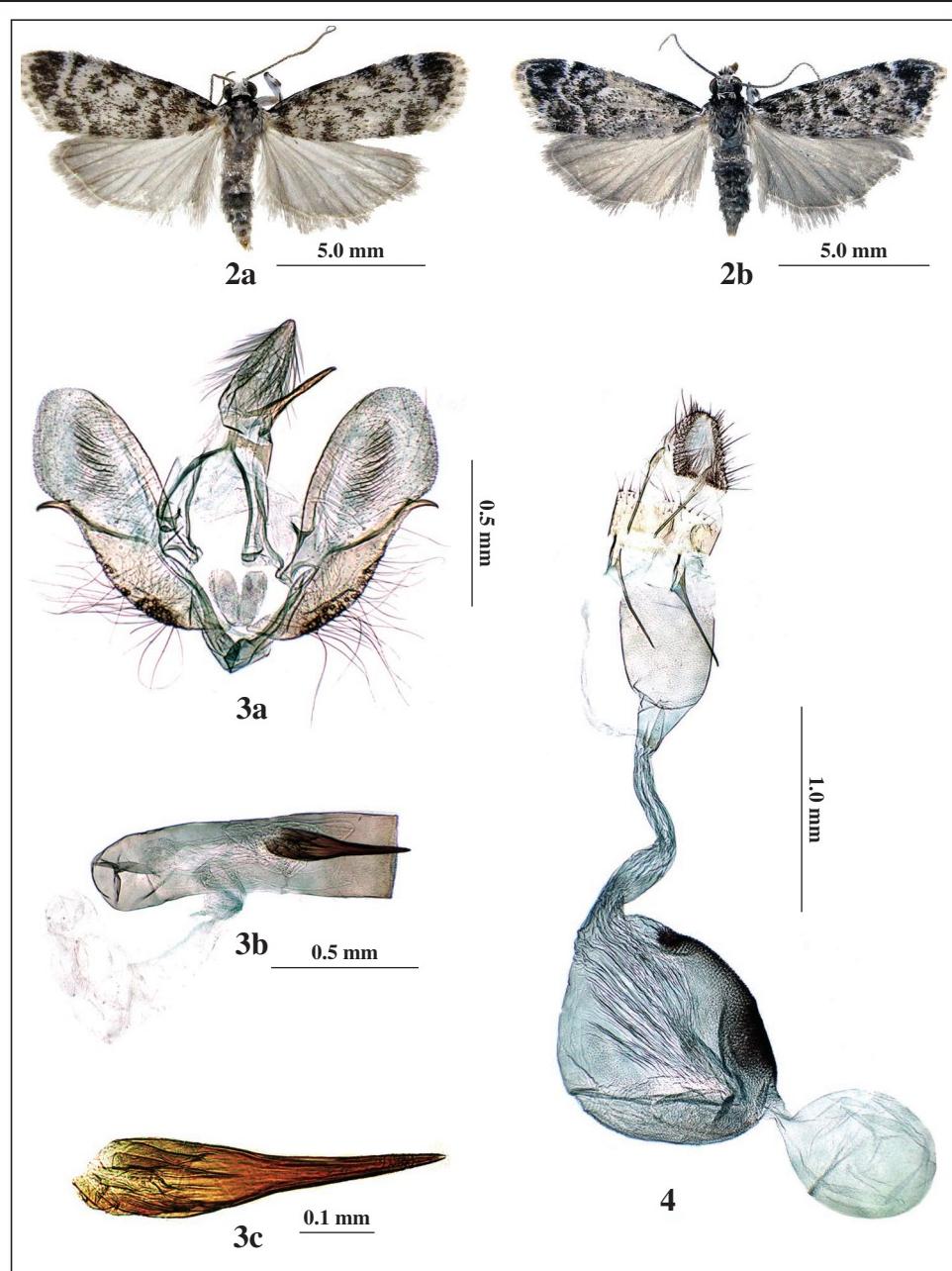
BIBLIOGRAPHY

- LI, H. H., 2002.– *The Gelechiidae of China*, 1: 538 pp. Nankai University Press, Tianjin.
- LI, W. C., LI, H. H. & NUSS, M., 2010.– Taxonomic revision of *Scoparia* Haworth, 1811 (Lepidoptera: Crambidae: Scopariinae) from China.– *Zootaxa*, **2609**: 1-33.
- LI, W. C., 2012.– One new species of the genus *Scoparia* Haworth from China (Lepidoptera: Crambidae, Scopariinae).– *SHILAP Revista de lepidopterología*, **40** (157): 73-75.
- HIJMANS, R. J., CAMERON, S. E., PARRA, J. L., JONES, P. G., JARVIS, A. & RICHARDSON, K., 2004.– Worldclim 1.3. Available from <http://www.worldclim.org> (accessed 2ed January 2013).
- HIJMANS, R. J., GUARINO, L., JARVIS, A., O'BRIEN, R., MATHUR, P., BUSSINK, C., CRUZ, M., BARRANTES, I. & ROJAS, E., 2005a.– DIVA GIS 5.2. Available from <http://www.diva-gis.org> (accessed 2ed January 2013).
- HIJMANS, R. J., CAMERON, S. E., PARRA, J. L., JONES, P. G. & JARVIS, A., 2005b.– Very high resolution interpolated climate surfaces for global land areas.– *International Journal of Climatology*, **25**: 1965-1978.
- NUSS, M., 1998.– The Scopariinae and Heliothelinae stat. rev. (Lepidoptera: Pyraloidea, Crambidae) of the Oriental Region - a revisional synopsis with descriptions of new species from the Philippines and Sumatra.– *Nachrichten des entomologischen Vereins Apollo*, suppl., **17**: 475-528.
- NUSS, M., 2005.– Scopariinae. In: B. GOATER, M. NUSS & W. SPEIDEL, Pyraloidea I. In: P. HUEMER & O. KARSHOLT (eds.). *Microlepidoptera of Europe*, **4**: 127-180 pp., 184-185 pp., 194-201 pp., 225-238 pp., 259-276 pp. Apollo Books. Stenstrup.
- NUSS, M., LANDRY, B., VEGLIANTE, F., TRÄNKNER, A., MALLY, R., HAYDEN, J., SEGERER, A., LI, H., SCHOUTEN, R., SOLIS, M. A., TROFIMOVA, T., DE PRINS, J. & SPEIDEL, W., 2003-2013.– Global Information System on Pyraloidea. Available from <http://www.pyraloidea.org> (accessed 2ed January 2013).

*W. C. L. & D. L.
College of Agronomy
Jiangxi Agricultural University
Nanchang 330045
R. P. CHINA / P. R. CHINA
E-mail: weichunlee@126.com

*Autor para la correspondencia / Corresponding author

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Figs. 2-4.—*Scoparia monticola* Nuss, 2a. male adult; 2b. female adult; 3a. ventral view of male genitalia and phallus removed (prep. gen. LW12055); 3b. aedeagus (prep. gen. LW12055); 3c. cornutus (prep. gen. LW12055); 4. ventral view of female genitalia (prep. gen. LW12060).